

## **ABSTRACT**

### **INTRODUCTION**

Resuscitation of a sick child in the Emergency Department (ED) adds an emotional stress to the treating physician. Accuracy of drug doses administered to children in the ED can be challenging at the best of times and consequently medication errors in children have been shown to be very common. Reliable paediatric weight estimation is the keystone in child resuscitation in the ED. Knowledge on estimated body weight is crucial in drug dosage calculation, determination of tube size, intravenous drug administration, defibrillation and other life-saving measures.

### **AIMS AND OBJECTIVES**

1. To determine the degree to which the length based weight estimation tape (Broselow tape) predicts measured weight in children of Madurai.
2. To validate the length based weight estimation tape (Broselow tape) for use in our clinical setting.

### **MATERIALS AND METHODS**

A prospective observational study done in Institute of Child Health and Research Centre, Government Rajaji Hospital, Madurai over a period of 1 year. After getting an informed parental consent, data were collected. The Broselow tape weights were determined, according to the tape directions. Then the child was weighed using a child weighing scale or baby weighing scale. Statistical analysis was done using SPSS version 20.

## RESULTS

Our study included 1099 children of which, 748 (68.1%) male children and 351 (31.9%) female children. The correlation between actual weight and tape weight was excellent, with the  $r^2$  values being 0.97. The overall bias, as demonstrated by Bland-Altman methodology was an underestimation of **1.6 kg**. Precision of our study with 95% confidence limits of the Bland-Altman methodology was **-4.7kg to 3.5kg**. The other major indicator of bias, **the mean percentage error (MPE)**, showed an **underestimation of 8.5%**.

## CONCLUSION

The implication of this study is that Broselow tape is relatively inaccurate and that with increasing age and weight they become more inaccurate.

**KEY WORDS:** Broselow tape, actual weight, Emergency Department